ASSEMBLY & WIRING INSTRUCTIONS

Q MULTIPLIER KIT

MODEL AQ & DQ

PATENT APPLIED FOR

CENTRAL ELECTRONICS, INC.
1247 W. BELMONT AVENUE
CHICAGO 13, ILLINOIS

118MX 6
7-1-55

I. ASSEMBLY OF CHASSIS (See Fig. 2 and Fig. 3)

The five terminal strips are designed TA, TB, TC, TD and TE; the two tube sockets are designated SA and SB, as shown in Fig. 2

Note that the ground lug on terminal strips TA and TD are in similar position, while that of TB is different. On the 9 pin tube socket an arrow indicates space between pins #1 and #9. On the 7 pin tube socket an arrow indicates space between pin #1 and pin #7. All parts are mounted on bottom of chassis, unless otherwise stated. When #6 hardware is specified, use a #6/32x5/16" screw, a #6 lockwasher and a #6 hex nut.

1. Mount 9 pin tube socket SB with #4 hardware. The head of screw goes on top side of chassis. Use a lockwasher under the nut.
2. Mount 7 pin socket SA and terminal strip TA with #4 hardware, as shown in Fig. 2. It may be necessary to cut off part of TA mounting foot so it can be inserted between the chassis and socket mounting ring.
3. Mount terminal strip TE with #6 hardware.
4. Mount the IF transformer (on top of chassis) and terminal strip TB underneath with #6 washers and #6 nuts. Note the position of the coil leads. CAUTION: Do not use too much force when tightening these nuts.
5. Mount the terminal strip TD with #6 hardware.
6. Mount the Q coil bracket on top of chassis and the terminal strip TC on bottom of chassis, with #6 hardware, as shown in Fig. 3A.
7. Mount the cable clamp temporarily with #6 hardware.

II. ASSEMBLY ON TOP OF CHASSIS (See Fig. 3)

1. Take the dual variable tuning capacitor, C104, and cut off the two unused right hand stator lugs, as shown in Fig. 3. Mount this capacitor with 3 #6x3/16" screws to front flange with a #6 lockwasher under the head of each screw.
2. Take the 380 mmf. variable capacitor, C103, and cut off the two unused lugs, as shown in Fig. 3. The stator lug nearest rear flange (and for which there is no hole in chassis) should be bent up 90°. This lug is for C106. Mount C103 with 3 #6x3/16" screws to rear flange. Use a #6 lockwasher under the head of each screw.
3. Mount a #6 solder lug with a #6x3/16" screw to tapped hole in capacitor frame, as shown in Fig. 3. This lug is used to hold one lead of the temp. comp. capacitor C106. A lockwasher is not necessary.
4. Mount the switch on front chassis flange with a 3/8" lockwasher and 3/8" hex nut. The lockwasher is on outside of flange, under nut. Orient the switch as shown in Fig. 5. Mount a #4 lug under nut on the switch post, between terminals #1 and #12. This may be done before switch is mounted. The switch is not symmetrical and must be positioned as shown. Some switches and pots have a locating lug which fits the 1/8" hole in the chassis flange. As a precaution, check the position of switch with Fig. 5.

5. Mount the dual pot, R112 - R112A, on front chassis flange with a 3/8" lockwasher and 3/8" hex nut. Orient the Pot as shown in Fig. 5. Use lockwasher on outside flange, under nut.
6. Examination of the Q coil will show a blue dot and a red dot near the lugs. See Fig. 3A.
7. Solder a 2" length of red wire to the lug nearest red dot.
8. Solder a 2" length of blue wire to the lug nearest blue dot. Lead these wires away from the mounting stud with the free ends toward bottom of coil, as shown in Fig. 3A.
9. Screw a #4 nut onto threaded stem. Place a #4 lockwasher on stem, next to nut.
10. Mount the coil to bracket, from beneath chassis, using a #4 lockwasher and a #4 nut on top of bracket. Orient coil as shown in Figs. 2, 3, 3A and 4.

III. ASSEMBLING CABLE "A" (See Figs. 4 and 6)

The following are used for Cable "A" and should be soldered to the pins on the octal plug.

1. A 9-1/2" length of blue-yellow to pin #4 (S)
2. A 9-1/4" length of white-yellow to pin #2 (S)
3. A 9-1/4" length of brown-yellow to pin #7 (S)
4. A 9-1/4" length of shielded green wire to pin #5 (S)
5. A 9-1/4" length of shielded black wire to pin #8 (S)
6. Solder the two shield braids together with a 2-1/2" length of bare wire. Solder the bare wire to pin #1.
7. Slide a 5" length of clear plastic tubing over the cable, all the way down to the socket.
8. Push the shielding back about 1" on each shielded wire. Solder a 2" piece of bare wire to the end of each shielded wire. (See Fig. 4)

IV. PRELIMINARY WIRING (See Figs. 4 and 5)

All wires and parts should be placed as shown, except when otherwise stated.

(S) Means solder and (NS) means do not solder.
SA3 refers to pin #3 of the 7 pin socket, SA.
Similarly, TC1 means lug #1 of the 3 lug terminal strip TC. Take care not to drop solder or bits of wire into IF transformer opening.

1. A blue-white jumper from SB1 (NS) to TE4 (NS)
2. A blue-red jumper from SA1 (NS) to TB4 (NS)
3. A green lead from IF Trans. to TB3 (NS). Cut off excess length.
4. A black lead from IF Trans. to TB2 (NS). Cut off excess length.
5. A red lead from IF Trans. to TE5 (NS). Cut off excess length.
6. A blue lead from IF Trans. to SB6 (S). Cut off excess length.
7. The long transparent lead of Q coil to TC3 (NS)
8. The short transparent lead of Q coil to TD1 (NS)

9. Cut the red lead of Q coil to proper length and attach to TD3 (NS)
10. Cut the blue lead of Q coil to proper length and attach to TD2 (NS)
11. An insulated jumper from TD3 (NS) to stator lug of C104 (S). Make this jumper short as possible and run about 1/16" from side of Q coil. DO NOT arch as shown. This connection makes use of the 60 mmfd. section of the variable capacitor, C104, for use with the average receiver. See Page 2 of the Q Multiplier operating instructions.
12. Mount cable "A" under clamp and tighten nut, with clamp over sleeving.
13. The center conductor of shielded black lead to TB1 (NS). Cut off excess length.
14. The center conductor of shielded green lead to TD1 (S)
15. The blue-yellow lead to TB4 (NS)
16. The white-yellow lead to SB4 (NS)
17. The brown-yellow lead to SB5 (NS)
18. A brown-yellow jumper from SB5 (S) to SA4 (S)
19. A white-yellow jumper from SB4 (S) to SA3 (NS)
20. A white-yellow jumper from SA3 (S) to TA4 (NS)
21. The bare wire on shield braid of shielded black wire to SB ground lug (near pin #1) (NS)
22. The bare wire on shield braid of green shielded wire to TD2 (NS)

V. AT THE SWITCH (SW) AND POT R112 - R112A (See Fig. 5)

1. A bare wire jumper from solder lug (between term. #1 and #12)(S) to SWA 12 (NS)
2. A 10K 1/2 watt resistor,*R107, from SWA 12 (NS) to SWA5 (S) this resistor should be placed across face of switch and NOT arched around it.
3. A jumper from SWA9 (S) through SWA7 (S) to SWA6 (NS)
4. A green-orange jumper from SWA6 (S) through hole in chassis, to TE2 (NS). Keep this lead away from the four leads passing through other nearby hole.
5. A black jumper from SWA12 (S), through hole, to TE3 (NS)
6. A slate jumper from SWA10 (S), through hole, to TE1 (NS)
7. A green-white jumper from SWA8 (S), through Q coil hole to TC1 (NS)
8. An orange-white jumper from PA2 (NS) through hole, to SA7 (NS)
9. A bare jumper from PB2 (S) to PA2 (S)
10. An orange jumper from SWA4 (S) through hole, to TA3 (NS)
11. A 2.2K resistor, R116, from SWA3 (S) to PB3 (S)
12. An insulated jumper from SWA1 (S) to PA3 (S)
13. A 47 MMF. neg. 750 capacitor C106 (See Fig. 3) from stator lug of C103 (S) to solder lug on end of frame (S). This should be about 3/8" above the chassis and 1/8" from the bakelite strip of the variable capacitor.

VI. WIRING RESISTORS, CAPACITORS, ETC. (See Fig. 7)

Resistors are 1/2 watt, except as noted.

1. A .005 MF mica capacitor C111, from TC1 (S) to TC3 (S)
2. Solder a bare jumper to stator lug of C103 and bend free end in a direction away from Q coil.
3. A .005 MF mica capacitor C105, from TD4 (NS) to TD3 (NS). Place this capacitor against terminal strip TD. Arch free end of jumper over C105 to TD3 (NS).

*10K 10% (silver band)

4. An 820 mmf. mica capacitor, C102, from TA1 (NS) to TD3 (NS). Place this capacitor so it clears the 3 plate variable capacitor stator lug projecting through the 5/16" hole. Place on edge and about 3/32" from side of Q coil.
5. A 47 mmf. neg. 750 capacitor, C107, from TD2 (S) to TD3 (S). Place this 3/32" from side of Q coil.
6. A 100K resistor, R113, from SB9 (NS) to SB ground lug (near pin #5)(S).
7. A .005 MF mica capacitor, C109, from SB9 (S) to SA7 (NS).
8. A bare jumper from SB7 (S) to SB8 (NS).
9. A 180 ohm resistor, R113, from SB8 (S) to SA ground lug (near pin #1)(S).
10. A 2.2K ohm resistor, R103, from SB2 (NS) to TB2 (S).
11. A 51 mmf mica capacitor, C114, from TB1 (S) to TB3 (S).
12. A 3.3K ohm 2 watt resistor, R106, from TB4 (S) to TE5 (NS).
13. A 47K ohm resistor, R105, from SB3 (NS) to TE5 (NS).
14. A .005 MF ceramic capacitor, C112, from SB3 (S) to TE3 (NS).
15. Make RFC as follows: take a 100 ohm resistor, R115, and wind 12 turns of #22 enameled wire. Scrape insulation from both ends and solder to resistor leads. An RFC, R115, from SB2 (S) to TE2 (S).
16. A 100 ohm resistor, R108, from TD4 (NS) to SA6 (S).
17. A 330 ohm resistor, R116, from SA7 (S) to TE1 (NS).
18. A 100K ohm resistor, R109, from TD4 (S) to TE1 (NS).
19. A 22K ohm 1 watt resistor, R114, from TE4 (S) to TE5 (NS).
20. A .005 MF ceramic capcitor, C113, from TE5 (S) to TE3 (NS).
21. A 0.1 MF 200V. tubular capacitor, C115, from TE3 (S) to TA4 (S). This capacitor should go between the two 5/16" holes in chassis. In addition to by-passing one side of the filament, it acts as a shield between the green-orange lead and the other four leads going through hole in chassis. The band on C115 indicates the ground end which goes to TE3.
22. A 10K ohm 1 watt resistor, R111, from TE1 (S) to SA ground lug (near pin #3) (NS).
23. A .005 MF ceramic capacitor, C108, from SA1 (S) to SA ground (near pin #3) (S). After this capacitor has been placed and soldered, as shown in Fig. 7, the leads should be bent so that C108 lays flat and 1/8" above SA pins.
24. An 820 mmf mica capacitor, C101, from TA2 (S) to TA1 (NS).
25. A 10K* resistor, R102, from TA3 (S) to TA1 (S).
26. A .005 MF ceramic capacitor, C110, from SB1 (S) to SB ground lug (near pin #1)(S).
27. If the Q Multiplier is to be mounted inside a Sideband Slicer, it is advisable to cover the terminals of TB with a strip of insulation to prevent shorting when a screw driver is used to adjust the potentiometers.
28. Check your work for correctness, good soldered joints, shorts, etc.
29. Insert the tubes.
30. Do not attach the bottom shield until you are positive that the unit is operating properly. Then use 4 #6 self-tapping screws.

If you find that the SELECTIVITY control is in the extreme counter-clockwise position for greatest NULL, R116 should be changed from 2.2K to 3.3K. A 3.3K resistor is included in the kit for this purpose, if necessary.

*10K 5% (gold band)

DL4GO

VII. WIRING CABLE DQ - FOR MODEL DQ ONLY. (See Fig. 8)

The following wires make up cable "B" and are soldered to octal socket pins.

1. A 36" length of blue-yellow to pin #4 (S)
2. A 36" length of white-yellow to pin #2 (S)
3. A 36" length of brown-yellow to pin #7 (S)
4. A 38" length of coax - white dot - inner conductor to pin #5 (S)
5. A 38" length of coax - green dot - inner conductor to pin #8 (S)
6. The two shield braids are soldered together with a length of bare wire. The bare wire goes to pin #1 (S).
7. The five leads are inserted into and thru a 31" length of black plastic sleeving, within 1/4" of octal socket.
8. A socket cap is forced on the octal socket and clamp tightened.
9. After checking the cable, plug the octal plug into the octal socket.
10. The free ends of cable "DQ" are:

    a. Blue-yellow - B plus 250V From Pin #4
    b. White-yellow - 6.3V Filament From Pin #2
    c. Brown-yellow - 6.3V Filament From Pin #7
    d. White dot coax - Input to Q Multiplier From Pin #5
    e. Green dot coax - Output from Q Multiplier From Pin #8

VIII. MOUNTING THE COMPLETED Q MULTIPLIER TO THE PANEL

Before mounting Model AQ on the front panel, it is recommended that you plug the unit into the Slicer first, to make sure that it is operating properly, and is correctly wired.

1. Mount the chassis to the panel, with the potentiometer on the left side marked SELECTIVITY, with a 3/8" flat washer against the panel on both the potentiometer and switch.
2. Mount the skirted knob on the selectivity control with the control completely counter clockwise and the white line at the proper position.
3. With the switch in the center position, attach the small knob with the pointer to the OFF position.
4. Set the TUNING capacitor at 50% rotation. Mount the knob skirt with the Allen wrench, with the white line pointing to "0". Allow about 1/16" clearance to the front panel. Now attach the knob, allowing about 1/32" clearance from the skirt.
5. On Model DQ, plug cable "A" into cable DQ and push cable DQ through the large hole on the right side of the cabinet. Connect the power and RF leads.
6. Now proceed with the Alignment Instructions.

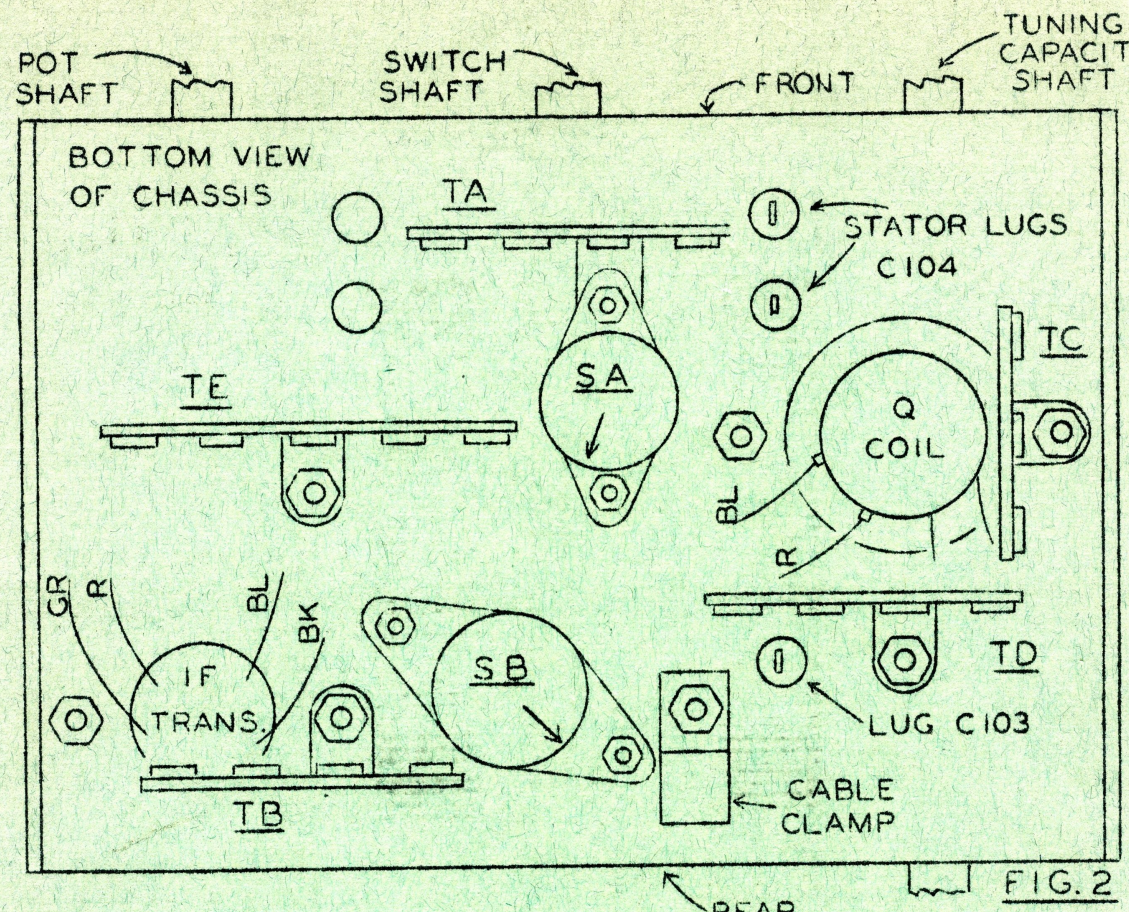


FIG. 2

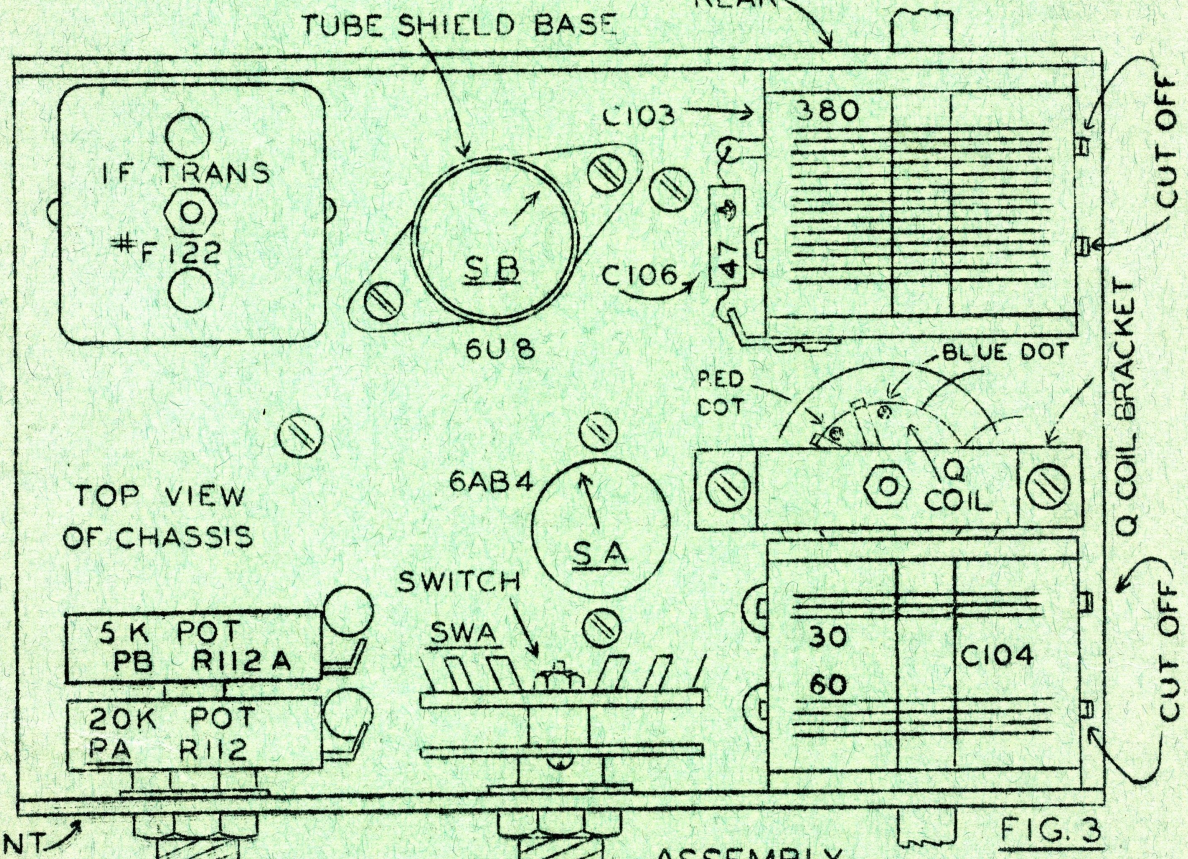
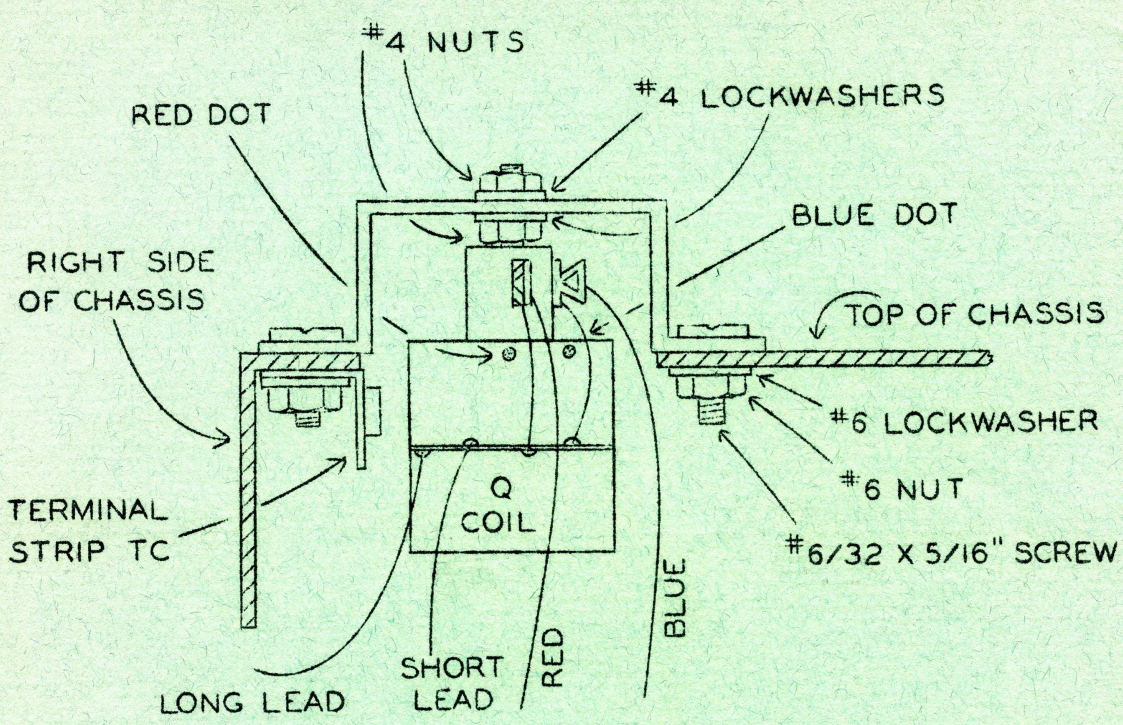


FIG. 3

ASSEMBLY
Q MULTIPLIER

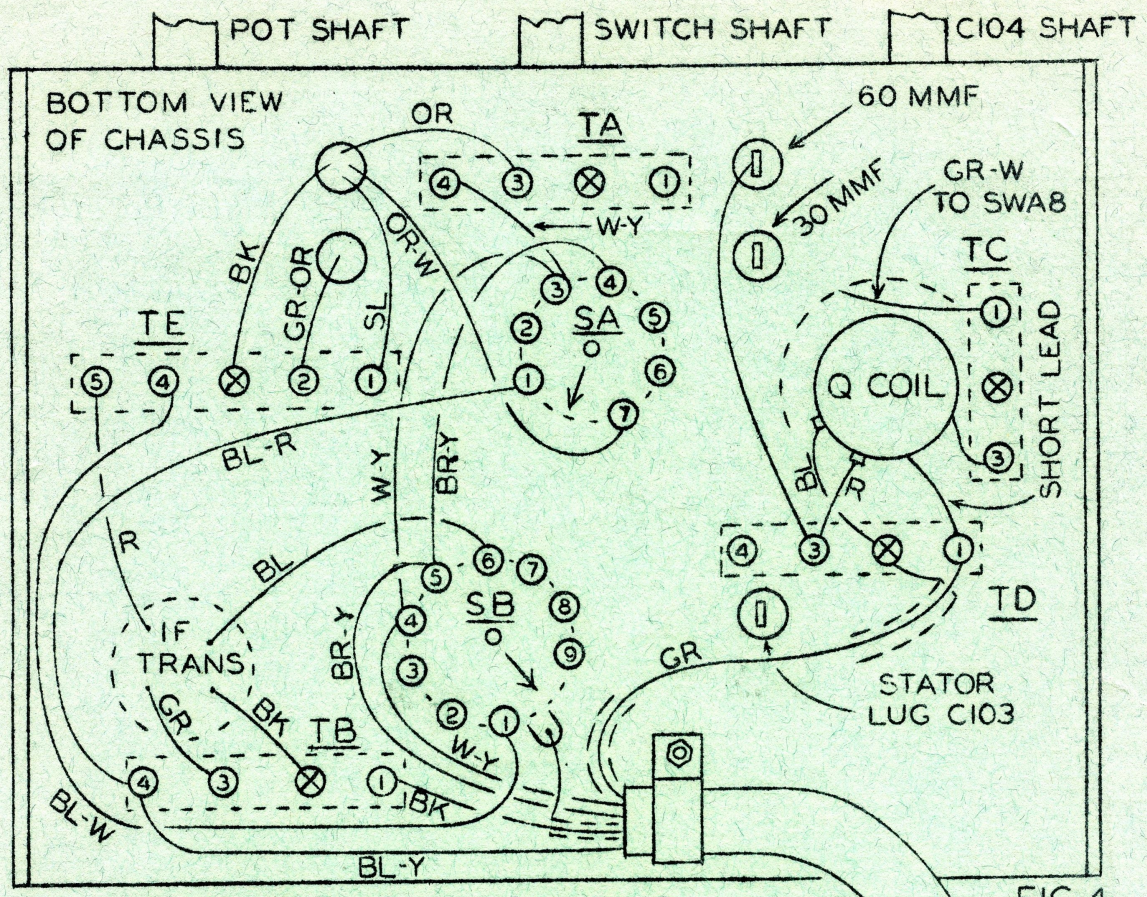
M126B
Q Mult. Kit 118 MXB
7-1-55
Printed in USA



Q COIL MOUNTING

FIG. 3A

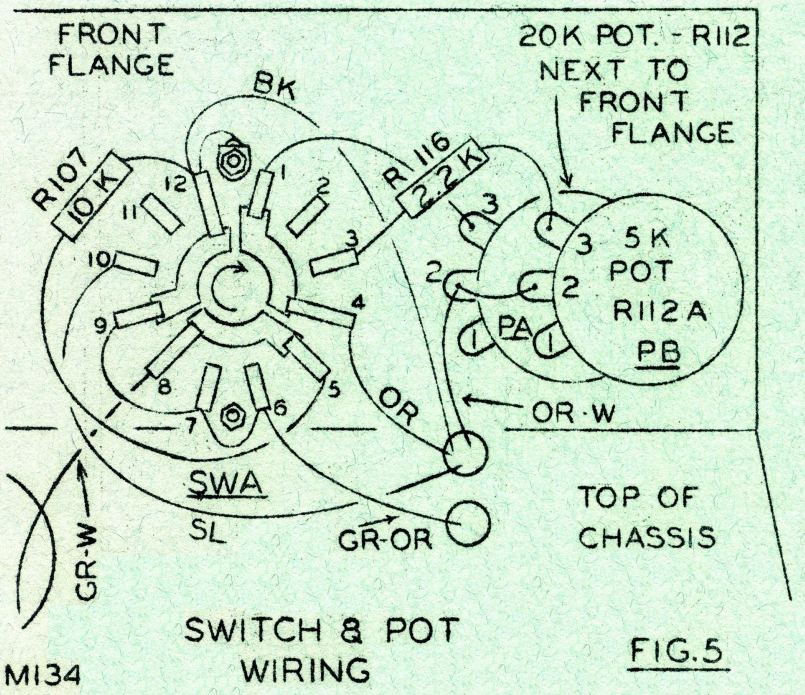
CENTRAL ELECTRONICS, INC.



PRELIMINARY CHASSIS WIRING

FIG. 4

CENTRAL ELECTRONICS, INC.



SWITCH & POT WIRING

FIG. 5

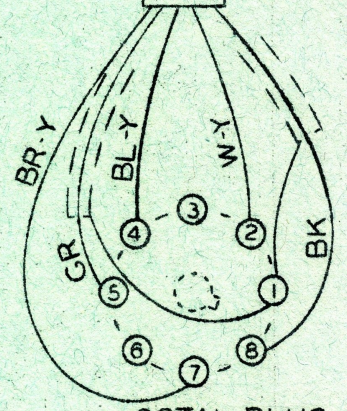
M134

CABLE A

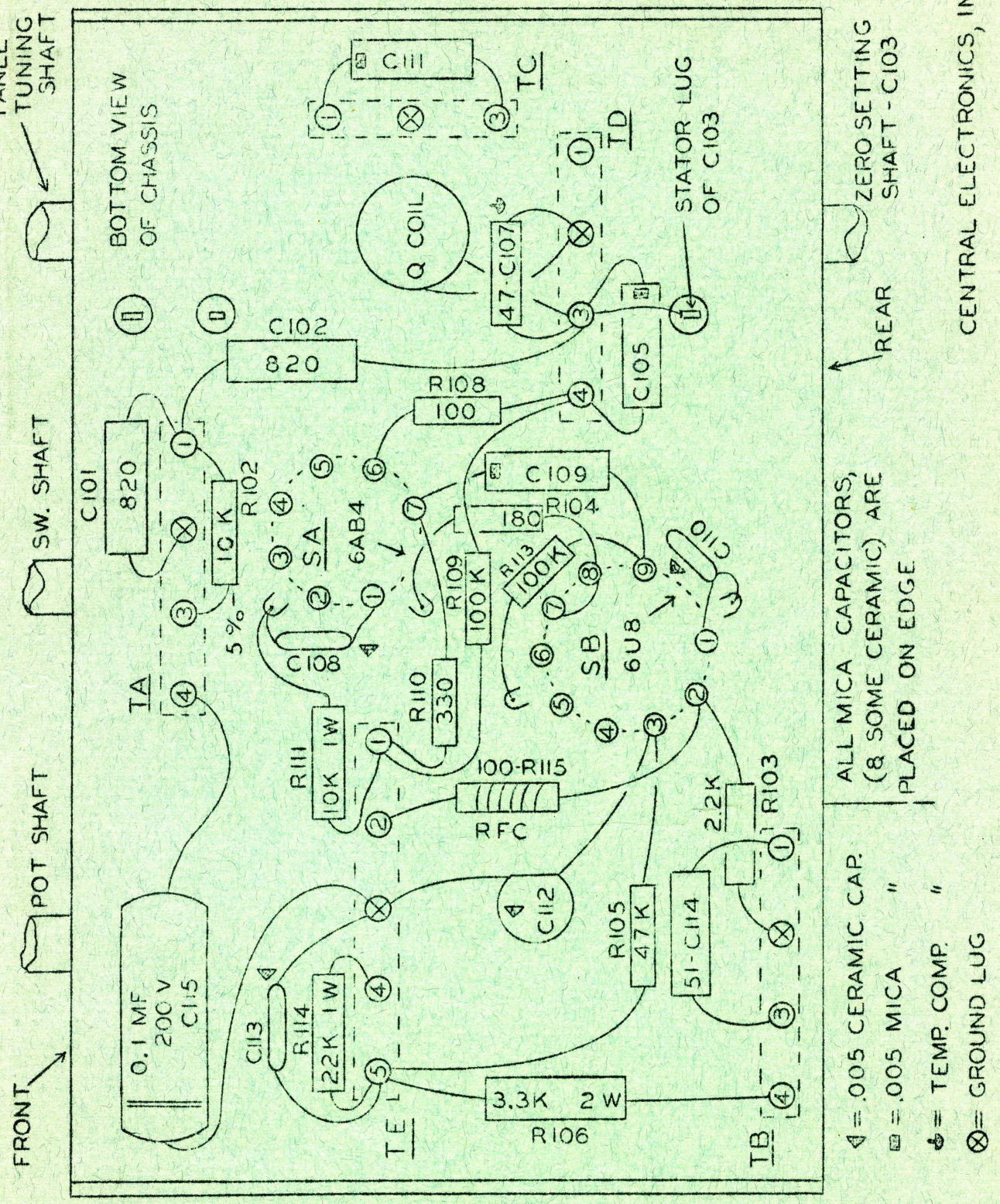
SLEEVING

CABLE WIRING

FIG. 6



OCTAL PLUG REAR VIEW



M128B

CHASSIS WIRING
Q MULTIPLIER

FIG. 7

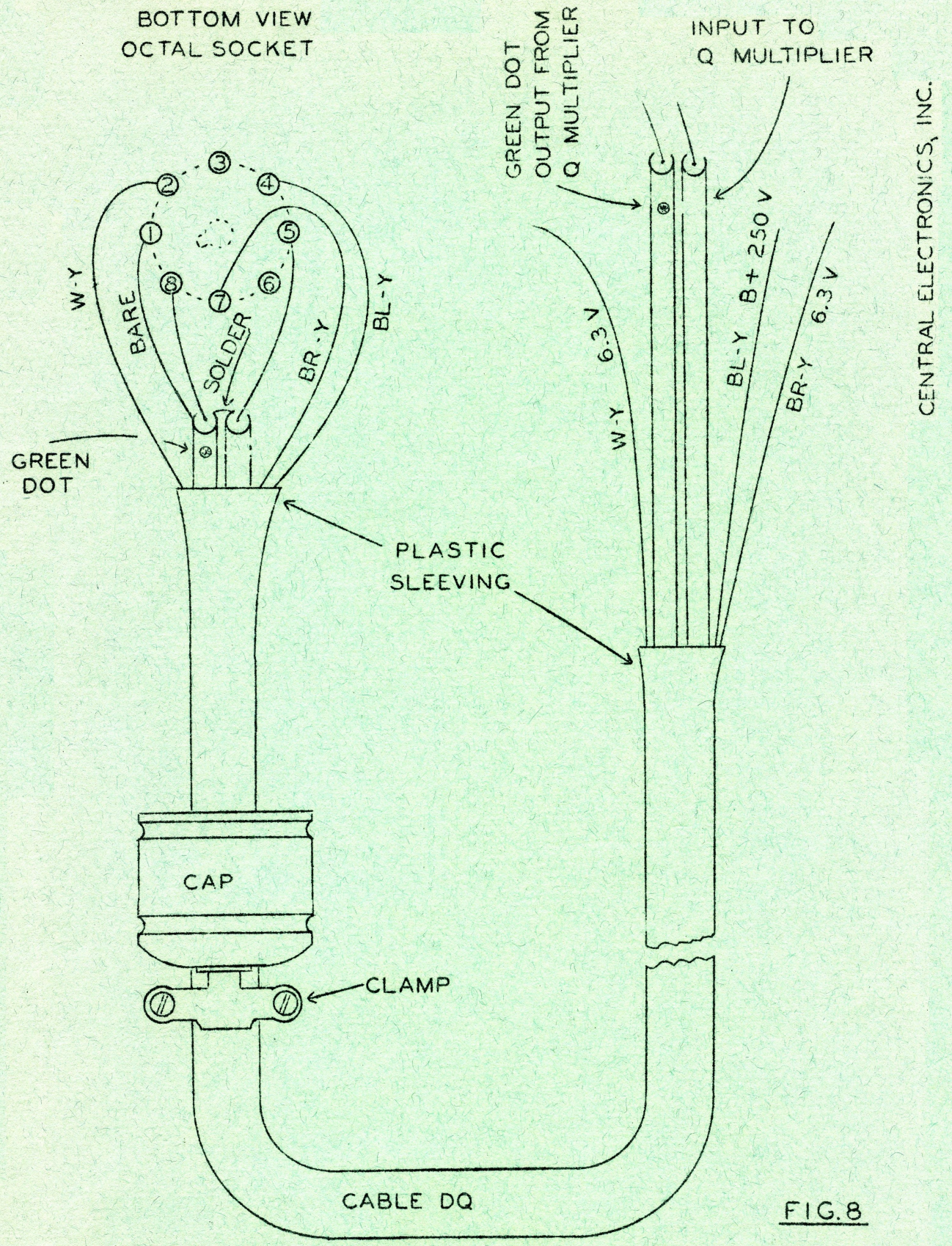


FIG. 8

CABLE FOR Q MULTIPLIER MODEL DQ ONLY M129A